

Intra & Interstate Markets for Montana Biomass Power

Energy Education Forum

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University of Montana

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Selling Renewable Power

- Governing document is Public Utility Regulatory Policies Act (PURPA)
- Established principle of “avoided cost”
- Left to states to implement

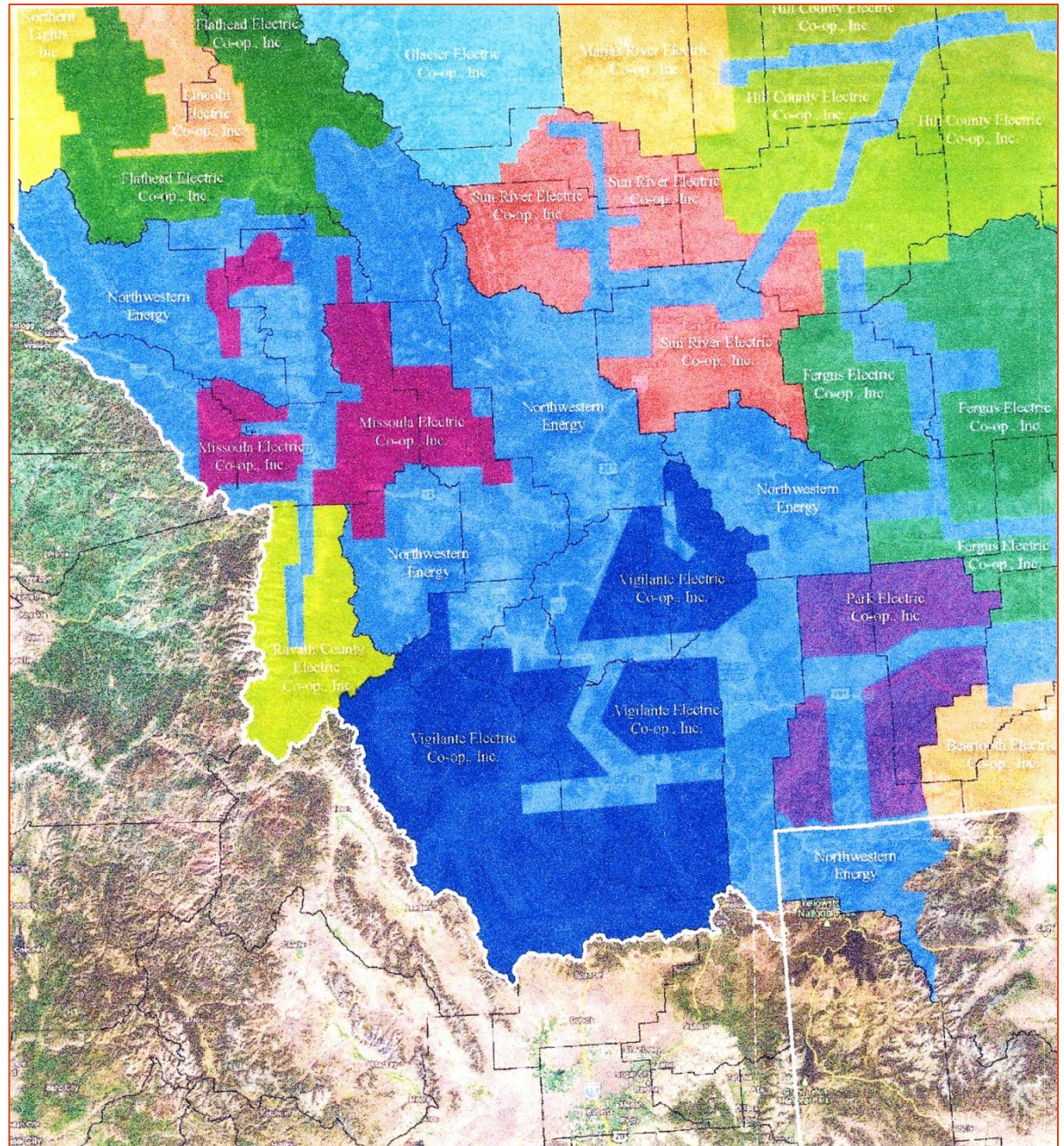
The Concept of REC's

- Renewable Energy Certificates or “Green Tags”
- Can be separated from underlying power
- Can be sold or traded separately or “bundled” with power
- Potential solution to transmission constraints

The Montana Marketplace

- Mix of investor owned and cooperative utilities
- Northwestern Energy clearly dominant
- Different rules apply to different utilities

Western Montana Utility Service Areas

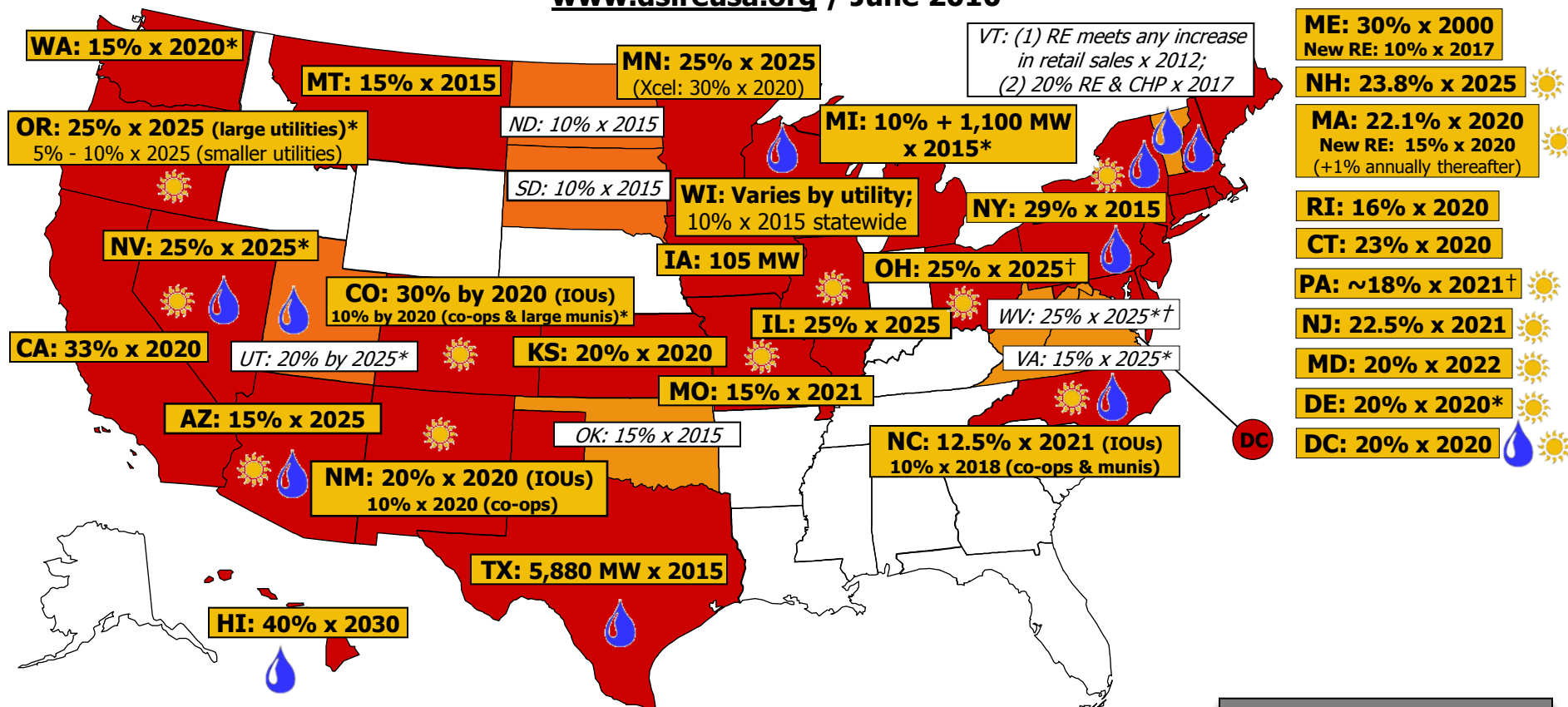


The Role of a Renewable Portfolio Standard (RPS)

- Creates market distinct from fossil power market
- Establishes renewable on renewable competition
- Measurement tool (% of total sales) does not favor biomass
- Establishes market for REC's

Renewable Portfolio Standards

www.dsireusa.org / June 2010



- State renewable portfolio standard
- State renewable portfolio goal
- 💧 Solar water heating eligible

- ☀️ Minimum solar or customer-sited requirement
- ✳️ Extra credit for solar or customer-sited renewables
- † Includes non-renewable alternative resources

29 states + DC have an RPS
(7 states have goals)

Montana's RPS

- 15% of total sales by 2015
- Interim step of 10% by 1/1/2010
- Tradable REC's
- \$10/MWH penalty for shortfalls
- 75mw of "Community Renewable"
each <25 MW

Northwestern Avoided Cost

- Established in conjunction with PSC
- 2008 filing gave options worth \$50-55/MWH
- Available only up to 10 MW capacity
- Later discussions indicate new rates may be \$60-65/MWH
- Can sell REC's elsewhere, if desired

Markets Outside Montana

- Governed by boundaries of Western Electricity Coordinating Council (WECC)
- Many RPS states are targets
 - Most allow tradable REC's
 - Complicated by various compliance dates
- California largest target
 - 20% RPS by 2010
 - 33% RPS by 2020
 - Transmission constraints limit “bundled” transactions

Western Electricity Coordinating Council Boundaries



Out-of-State Purchasers

- Bundled Products
 - BPA
 - Groups of BPA customers (NRU, PNGC)
 - Biomass can represent “block” in BPA Tier II
 - Basin Electric
- REC Purchases
 - Virtually anywhere in WECC
 - Needs to wait until needed (3 year shelf life)
 - California situation must clarify before any real value
 - Wind projects depress REC value

Adding Value Through Contract Structure

- Concept of earned “capacity payment”
- Value of local reliability, voltage support
- Value of dispersed set of biomass plants
- Savings in transmission losses to load center
- Seasonal and time-of-day pricing takes pressure off fuel supply

Changes That Could Balance the Equation

- Inclusion of carbon compliance in MT PSC avoided cost calculation
- National RPS at level greater than Montana's 15%
- Strong large CA REC market
- Montana political decision it wants biomass power and directs Northwestern to procure